



Equipping your facial plastic clinic for office-based procedures

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Abstract

Office-based procedures can be a fulfilling part of the facial plastic practice with the right tools, personnel, and preparation. Equipping the clinic for office-based procedures has several unique considerations that ultimately impact its success. It is important to strategize preemptively regarding what treatments will be offered and the respective equipment that will allow the safe, cost-effective, and high-quality delivery of those treatments. Most procedures in the office-based setting are cosmetic in nature and there are often overlapping treatment modalities that target similar outcomes. Patient selection and counseling is a crucial step in preparing for office-based procedures in the effort to maximize patient satisfaction. Nearly all the most common facial plastic procedures can be delivered in the office-based based setting under local anesthesia and moderate sedation, depending on the expertise of the surgeon. To enable these and other categories of treatments, there are certain expensive pieces of technology that one might consider for their office-based practice and other fundamental supplies that are necessary for almost all practices. Though the initial investment in equipment can be costly, this article also discusses more affordable alternatives or third-party sales of devices and equipment. The field of facial plastic surgery is very dynamic and having both peer and mentorship networks is invaluable in navigating some of the financial decisions discussed herein. This article also briefly covers personnel, training, and accreditation considerations.

KEYWORDS

ambulatory surgical procedures, equipment, medical practice management

INTRODUCTION

Whether you are just establishing your office-based facial plastic practice or changing how your existing practice is structured, it is vital to correctly equip your office to deliver high-quality, high-value, and safe care. Generally, procedures comprise a significant portion of a facial plastic surgeon's work. Initial consultations and follow-up visits are the foundation of any facial plastic office, but whether or how much one performs office-based procedures is

another endeavor entirely. The American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) 2021 member survey results showed a 40% increase in procedures, both surgical and nonsurgical, performed by plastic surgeons compared to 2020, reflecting a strong rebound in the context of diminishing volume during Corona Virus Disease 2019 (COVID-19) pandemic. Injectables (neurotoxins and dermal fillers) were some of the most commonly sought-after treatments according to the survey; although, rhinoplasty, hair rejuvenation, and blepharoplasty were

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also frequently performed.¹ All of the aforementioned procedures are feasible in the office-based setting.

Office-based procedures can be as safe as and possibly safer than procedures performed at hospitals and ambulatory surgery centers.² Prior research has also shown significant cost-savings in some areas of otolaryngology when comparing office-based procedures to their hospital-performed counterparts.³⁻⁵ Much of these savings are a result of avoiding facility and anesthesia-related fees. That being said, several laryngology studies have brought attention to how reimbursement patterns can potentially restrict cost-savings from feasible office-based procedures such as laser laryngeal surgery.^{6,7} It is important to consider patient volume, reimbursement patterns, and the future direction of the practice when equipping the office.

Facial plastic offices can significantly differ from each other in services offered and office-based procedures performed. With abundant well-trained personnel, extensive equipment, and facility capabilities, some offices can perform closer to the level of ambulatory surgical centers. In this paper, we limit the discussion to in-office procedures that can be achieved under local anesthesia, moderate sedation, and with inhaled anesthetics such as nitrous oxide. Discussing in-depth pathophysiology or biomechanical technicalities of the equipment is beyond the scope of this article. This paper will provide an overview of procedures that can be done in an office-based setting, the equipment required, as well as personnel and training considerations.

Procedures

There are numerous procedures that can be safely performed in the office, and discussion of all possible procedures is beyond the scope

of this paper; however, the most common procedures will be discussed in brief. Office-based procedures in facial plastics are commonly cosmetic procedures.⁸ Broadly, these procedures can be classified as surgical or nonsurgical. It is important to obtain a patient-centered treatment plan during a thorough consultation visit that explores patients' goals of treatment. Patient selection is key when considering treatment options available to achieve patients' goals. Though different treatments exist for many different skin types, some of the laser-based treatment modalities may not be appropriate for certain skin types, which should be discussed during patient counseling and selection.

Many of the available surgical and nonsurgical procedures in facial plastics address the effects of aging, with the general goal of restoring a youthful appearance. Some treatments target undesirable lesions, hair, or vascular malformations. It is important to note that substantial overlap exists in the effects that surgical and nonsurgical procedures can produce, emphasizing the importance of careful patient counseling and selection. Furthermore, many practices choose to provide some but not all treatment options. Tables 1 and 2 describe surgical and nonsurgical procedures, respectively.

In general, procedural sedation can be helpful in providing a comfortable patient experience in this setting. In the procedures described in Table 1, sedation is often not a requirement but is commonly combined with local anesthetic to make the experience more comfortable and is generally considered safe.^{2,11,12} Personnel, equipment, and training considerations for appropriate office-based anesthesia are described further in later sections.

Nonsurgical procedures can comprise substantial portions of a facial plastic practice. Some nonsurgical options, such as injectables, are often consumable products with expiration dates, which is

TABLE 1 Overview of several common surgical procedures performed in facial plastic offices.^{8,9}

Technique	Region	Analgesia/anesthesia	Targeted results
Brow lift	Upper face	Local anesthetic ± IV sedation	Addresses <ul style="list-style-type: none"> • Forehead rhytids • Imbalanced frown muscles • Upper eyelid esthetics • Lateral temporal laxity • Abnormal expressions
Blepharoplasty	Upper face	Local anesthetic ± IV sedation	<ul style="list-style-type: none"> • Decreases perception of aging • Can fix ptosis or lid laxity
Rhinoplasty	Midface	Local anesthetic ± IV sedation	<ul style="list-style-type: none"> • Provides desirable nasal features • Can enhance facial harmony and/or achieve greater symmetry
Lip lift	Midface	Local anesthetic ± IV sedation	<ul style="list-style-type: none"> • Improves vertical height of the upper lip • Decreases an elongated philtral distance
Face/neck lift	Mid/lower face	Local anesthetic + IV sedation	<ul style="list-style-type: none"> • Restores youth to the jaw, cheeks, and neck
Submental liposuction	Lower face	Local anesthesia	<ul style="list-style-type: none"> • Addresses "double chins" • Produces a more well-defined jaw contour
Hair transplantation	Scalp/upper face	Local anesthetic ± IV sedation	<ul style="list-style-type: none"> • Can address male pattern androgenic alopecia or other forms of hair loss¹⁰

Abbreviation: IV, intravenous injection.

TABLE 2 Overview of several common nonsurgical procedures performed in facial plastic offices.^{8,24}

Subcategory	Type	Targeted results
Injectables	Neurotoxins	<ul style="list-style-type: none"> • Prophylactic wrinkle prevention
	Dermal filler	
	Deoxycholic acid	<ul style="list-style-type: none"> • Lipid dissolution to improve jawline and chin contour
Resurfacing	Laser	<ul style="list-style-type: none"> • Can address freckles, melasma, age spots, fine wrinkles, undesirable tattoos, venous congestion, and more • Synergistic effect with surgical procedures
	Chemical peels	<ul style="list-style-type: none"> • Improve fine lines, sunspots, and complexion • Can diminish scarring • Deeper peels can have more dramatic effects
Microneedling		<ul style="list-style-type: none"> • Skin rejuvenation • Collagen production for diminishing wrinkles, stretch marks, and scars
Micro/dermabrasion		<ul style="list-style-type: none"> • Renews skin tone and texture • Scar treatment

important to consider in the context of expected patient volumes when stocking inventory.

Technology and devices

Some of the more expensive investments in a facial plastic office will be lasers, treatment lights, and related devices that are constantly evolving and becoming more advanced. It is important to strategize early regarding what treatments will be provided and are worth investing into; some of the devices have overlapping features and thus purchasing one with fewer features earlier with the intention of upgrading may be financially imprudent. Laser shields and other accessories may be necessary for patient safety depending on the device. High upfront costs can understandably impose certain restrictions on what and how many services a new facial plastic practice can offer. Device leasing is also an option for some.

In addition to ablative laser devices such as Nd:YAG, Er:Yag, or CO₂ devices, there are also intense pulsed lights (IPLs), radio-frequency devices, endoscopes, and room/device light systems to consider for purchase.

Endoscopy in facial plastics is well-described in the literature,¹³⁻¹⁵ and endoscopic techniques can be useful in the office. Endoscopy equipment consists of various components required for use such as endoscopes, monitors, navigation systems, camera systems, light source, equipment carts, disinfection systems, and others.^{16,17} It is possible to purchase sets or individual components, though it is crucial to make sure all components are compatible.

Another device that can be useful in relieving procedure-related pain and anxiety is a nitrous oxide delivery system, which is a patient-controlled inhaled analgesic device. The benefits of nitrous oxide include: easy delivery method, quick-onset, and patient-control of

analgesia. It is important to discuss the costs, risks, and benefits of this adjunct with the patient as it is typically a noncovered service.¹⁸ Specific licensing requirements for administration and monitoring of nitrous oxide, minimal sedation as opposed to moderate/deep sedation, may vary from one region to another. It is essential that healthcare professionals familiarize themselves with local regulations governing its use.

Devices can be bought directly from the manufacturer or from third parties. Typically, preowned devices do not have the same warranty coverage as new devices, however, they are generally well-refurbished and function appropriately. New devices from third-party sellers may include original warranty, though it is important to check with the seller and the manufacturer. “Med Share Laser,” “Bimedis,” “eBay” and “Med Laser USA” are some of these marketplaces, though peer networks may offer better insight as to where to acquire preowned or third-party sales.

Other equipment

In addition to the previously mentioned equipment, it is important to supply the office with the appropriate surgical equipment, implants (if offered as a service), and procedure room items. Surgical equipment can be obtained from different suppliers. The AAFPRS Buyer's Guide is a useful catalog listing various medical supply companies. Both manufacturers and third-party sellers are listed for a variety of product categories partially tabulated in Table 3. The guide additionally contains other resources such as those pertaining to accreditation, billing services, advertising, coding, credentialing, and many others.¹⁹

The careful selection of necessary medications is an integral component to the effective functioning of a clinic equipped for

TABLE 3 Abbreviated version of the AAFPRS Buyer's Guide Categories.¹⁹

Categories	Subcategories
Apparel	<ul style="list-style-type: none"> • Compression/postsurgical garments • Consultation garments • Custom-made • Disposable • Lab coats • Spa garments • Staff uniforms • Surgical garments
Endoscopy ^a	<ul style="list-style-type: none"> • Cameras • Endoscopes • Instruments • Light sources • Monitors
Implants	<ul style="list-style-type: none"> • Cheeks • Chin • Custom • Expanders • Eyelid closure • Fat grafting • Jaw • Lips • Nasal • Reconstruction and restoration • Soft tissue/fillers
Lasers ^a	<ul style="list-style-type: none"> • Cutaneous flaws • Fiberoptics • Hair removal • Laser eyewear • Light emitting diode • Lesions • Plasma regeneration • Skin resurfacing • Tattoo removal • Vein removal
Practice management	<ul style="list-style-type: none"> • Various practice management resources
Publications	<ul style="list-style-type: none"> • Books • Digital media • Journals • Magazines
Skin/cosmetics	<ul style="list-style-type: none"> • Acne/blemishes • Antiaging • Burn care • Collagens • Creams/lotions • Microdermabrasion • Peels • Pre/postoperative • Scar treatment • Skin tightening • Soft tissue repair
Surgical accessories/equipment	<ul style="list-style-type: none"> • Anesthesia/airway supplies • Equipment leasing • Furniture • Lighting • Electrosurgical equipment

TABLE 3 (Continued)

Categories	Subcategories
	<ul style="list-style-type: none"> • Microscopes/telescopes • Needles/syringes • Personal protective equipment • Protective eyewear • Skin markers • Sterilizers/cleaners/autoclaves • Surgical instruments and sets • Surgical loupes • Tables
Wound care/ pharmaceuticals	<ul style="list-style-type: none"> • Anesthetics/sedatives (local anesthetics, benzodiazepines, opioids, etc.) • Bruising reduction/care • Casts/dressing protectors • Gel sheeting • Medication management • Narcotics lockers • Pain management • Patient warming

Abbreviation: AAFPRS, American Academy of Facial Plastic and Reconstructive Surgery.

^aAlso mentioned in previous sections.

procedures. Local anesthetics such as lidocaine and bupivacaine, in addition to sedatives, are crucial to many minor procedures and provide essential pain relief and patient comfort. Another versatile substance is hyaluronidase, which is particularly useful in aiding the subcutaneous spread of other drugs and managing complications associated with dermal filler injections. Tranexamic acid can be useful in reducing postoperative edema and ecchymosis. A well-stocked crash cart is prudent, stocked with drugs such as epinephrine, atropine, and diphenhydramine. Finally, depending on the nature of the procedures performed, a clinic might also need to stock a range of antibiotics for either prophylactic or therapeutic use.

Personnel, training, and other considerations

Physician assistants (PA) and nurse practitioners (NP) can be immensely helpful in certain roles. Both are typically trained well enough in procedural skills to assist in office-based procedures, should that be necessary. advanced practice providers (APPs) can also be trained to perform laser-based procedures, freeing surgeons' availability for surgical procedures. As procedural volume increases, greater numbers of follow-up visits can be anticipated, which APPs can reasonably manage. Medical assistants and registered nurses will continue to be helpful with patient intake and nursing roles, respectively.

The American College of Surgeons (ACS) Core Patient Safety Principles for Office-Based Surgery are an excellent reference that discuss training and accreditation.²⁰ It is advised for physicians who perform office-based surgery to have their facilities accredited.

Accreditation bodies include the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the Accreditation Association for Ambulatory Health Care (AAAHC), the American Association for Accreditation of Ambulatory Surgical Facilities (AAAASF), American Osteopathic Association (AOA), or by state-recognized entities. Accreditation bodies typically provide resources for preparing and applying for accreditation on their respective websites.²⁰

Physicians administering or supervising moderate sedation/analgesia, deep sedation/analgesia, or general anesthesia should have appropriate education and training. Safe sedation and analgesia education is another important consideration. Depending on who is administering sedatives and analgesia, continued medical education in safe sedation can increase patient safety. The American Society of Anesthesiologists has Safe Sedation CME training reflecting the latest ASA practice guidelines that are available to learners.²¹ Many other online resources exist that provide similarly accredited certified medical education (CME)/certified nursing education (CNE) to physicians and nurses, such as Safe Sedation Training™, NetCE, and other avenues.^{22,23}

Finally, at least one physician, trained in advanced resuscitation (ATLS®, ACLS, or PALS) must be present with “age and size-appropriate resuscitative equipment” until the patient has met discharge criteria. Other medical personnel with direct patient contact should be at least trained in Basic Life Support (BLS).²⁰

CONCLUSION

Equipping a facial plastic office for office-based procedures has several unique considerations but can be a worthwhile endeavor. Having a long-term vision for the practice is critical to its success, especially when financing technology and equipment that may be used for many years. The market for facial plastic equipment is enormous and filled with equipment that can certainly be redundant. Starting with the right supplies, the right personnel, and the right training, facial plastic treatments can be feasibly delivered in the office-based setting. As the practice develops, expanding the inventory of equipment and treatments may be practical. Accreditation is an important part of safely performing office-based procedures. Finally, mentorship, industry relationships, and other professional networks can be invaluable to managing a growing facial plastic practice with the most up-to-date and sought-after treatments in the enormous and ever-growing equipment marketplace.

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Arman Saeedi: Conceptualization, methodology, investigation, data curation, writing—original draft preparation. **Danielle F. Eytan:** Conceptualization, methodology, validation, writing—review and editing, supervision, project administration.

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The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

All information and data were available to all authors.

ETHICS STATEMENT

The authors have nothing to report.

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